



## СИЛАБУС НАВЧАЛЬНОЇ ДИСЦИПЛІНИ

### «Animal Hygiene»

Ступінь вищої освіти - Магістр

Спеціальність 211 Ветеринарна медицина

Освітня програма Ветеринарна медицина

Рік навчання 2-3, семестр 4-5

Форма здобуття вищої освіти денна

Кількість кредитів ЄКТС 5,5

Мова викладання англійська

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## DESCRIPTION OF THE DISCIPLINE

The discipline "Animal Hygiene" is necessary for studying and mastering the basic principles of animal health, disease prevention and productivity, obtaining high quality and biologically valuable livestock products. The purpose of the discipline is to provide students with knowledge of the basics of modern zoohygienic science and practice to conduct in the economy a set of sanitary measures aimed at maintaining health, increasing productivity and reducing the cost of livestock products.

The subject of study of the discipline is the microclimate of livestock facilities, the calculation of its rationing and more. Hygiene of different species of farm animals. The primary task of modern hygiene is the timely detection of harmful to animal health environmental factors and the development of preventive measures to eliminate them; scientific and practical substantiation of microclimate parameters; development of sanitary and hygienic rules, standards, rational methods of keeping, feeding, watering and exploitation of various species of farm animals with mandatory environmental protection.

### **The purpose and objectives of the discipline**

The purpose of the discipline is to provide students with knowledge of the basics of modern zoohygienic science and practice for them in the economy of a set of veterinary measures aimed at maintaining health, improving productivity and quality and safety of livestock products.

**The course goal** is to develop the legislation and organizational structure of the State Veterinary Service of Ukraine at the enterprises of the meat, dairy and

fishing industries, at the border and transport, objects and methods of state veterinary control conditions for keeping animals.

**The course objective** is to familiarize students with the veterinary legislation of Ukraine with the basics of deontology and jurisprudence in veterinary medicine, veterinary records management in the field of animal hygiene, prevention of diseases of various etiologies, control and regulation of microclimate parameters of livestock facilities.

**The task of studying the discipline.**

The task of studying the discipline "Animal Hygiene" is theoretical knowledge and practical skills in order to professionally carry out:

- organization of sanitary and hygienic measures aimed at creating an optimal microclimate for animals;

- control and organization of measures for the prevention of infectious invasive and non-communicable diseases of animals;

- providing animals with high-quality feed resources, compliance with the rules and regimes of feeding and watering animals, taking into account species, age and productive characteristics;

- introduction into the practice of animal husbandry of modern technologies of keeping, exploitation of animals, as well as their rehabilitation (exercise, hardening, insolation, etc.);

- objective professional evaluation of the so-called modern industrial technologies, taking into account the positive and negative consequences of their use in animal husbandry;

The primary task of modern hygiene is the timely detection of harmful environmental factors and the development of preventive measures to eliminate them. It is important to take into account when implementing new technological techniques or new technologies physiological features of the animal body.

**As a result of studying the discipline, the student must**

**know:** the terminology and the main provisions of national and international legislation.

**Acquisition of competencies:**

**General Competences (GC):**

1. Knowledge and understanding of the subject area and profession.

**Professional (special) competencies (FC):**

1. Ability to apply methods of working with national and international regulations, scientific papers, methodological developments, recommendations, instructions, etc. in professional activities.

2. Development and support of biosafety measures, maintenance of animal hygiene, best practices in animal health, careful use of veterinary drugs, principles of preventive medicine, application of animal health and ethology, assessment and reduction of risk factors that provoke disease and negatively affect productivity.

3. Ability to plan sanitary measures, develop procedures and monitor compliance with hygiene requirements at facilities for the production of safe food, feed and feed additives, etc.

4. Ability to organize and conduct state control of hygienic requirements and sanitary measures in agri-food markets and facilities.

5. Ability to carry out state (internal) veterinary and sanitary control at the facilities for the production and circulation of sanitary measures, to apply appropriate methods of sampling, handling and results of their tests (research).

6. Ability to carry out veterinary and sanitary control of production and circulation of feed, feed additives, premixes, etc. at controlled facilities, competently use their research methods and conduct their sanitary assessment.

7. Ability to control the hygienic requirements of the facilities for the production and processing of livestock products, veterinary facilities, etc.

8. Ability to control the effectiveness of capacity rehabilitation in accordance with the requirements of national and international regulations.

## STRUCTURE OF THE DISCIPLINE

<u>Theme</u>	<u>Lectures / practical</u>	<u>Learning outcomes</u>	<u>Assessment</u>	<u>Tasks</u>
<b><u>Semester 4</u></b>				
<b>Module 1. Physical properties of the air environment</b>				
<b>Topic 1.</b> Introductory lecture. Subject and methods of "Animal Hygiene". History of discipline development. Basic provisions for the humane treatment of animals. Hygiene of animal care.	2/3	<p>The student must: Know the history of the formation and development of hygiene as an independent science; main tasks and purpose of the course; basic concepts of animal welfare, the concept of stress and stress reactions of the organism, adaptation and acclimatization of animals, forms of animal behavior, prevention of technological stress of animals.</p> <p>Be able to use hygiene methods for software optimal indoor microclimate and animal health; analyze behavior of farm animals of different species, sex and age groups, animals in different physiological states.</p> <p>Use modern laboratory equipment and devices to study the indicators of microclimate and physiological condition of animals.</p>	<p><i>Preparation for lectures (previous introduction to the presentation and lecture at eLearn).</i></p> <p><i>Execution and delivery of laboratory work (in methodical recommendations and independently).</i></p> <p><i>Execution of independent work (tasks in methodical recommendations and eLearn).</i></p> <p><i>Preparation and writing of modular test work (test- in eLearn).</i></p>	<p><i>Execution and delivery of laboratory works - credited.</i></p> <p><i>Modular test work in eLearn.</i></p> <p><i>Independent work - according to the evaluation journal in eLearn</i></p>

<b>Topic 2.</b> The air environment of livestock facilities and its properties. Hygienic value of temperature, atmospheric pressure and humidity	2/4	The student must: Know the composition and properties of the air environment of livestock premises, the impact on the body of animals of temperature, humidity, atmospheric pressure, air velocity and light; know the general characteristics of ventilation systems and their characteristics, features the use of ventilation with natural and mechanical excitation of air, its purpose and impact on the body of animals, the importance of thermal balance of the premises.	
<b>Topic 3.</b> Air velocity and its hygienic value. Sanitary and hygienic requirements for ventilation and heat balance of livestock premises	2/4		
<b>Topic 4.</b> Solar radiation and its effect on animal body.	2/4		

**Module 2. Chemical composition of the air. Hygiene of livestock premises.**

<b>Topic 5. Chemical air composition environment and its effects on the body animals.</b>	2/3	<u>Know the chemical and biological composition of the air environment of livestock premises, sources of harmful gases and dust in the premises and their impact on animals.</u>  <u>Be able to create comfortable conditions for animals based on knowledge of chemical and biological properties of the air, which would help to strengthen their health and increase productivity.</u>  <u>Use modern laboratory equipment and devices to study the composition of the air environment, as well as a set of measures to prevent indoor air pollution.</u>	<i>Preparation for lectures (previous introduction to the presentation and lecture at eLearn).</i>  <i>Execution and delivery of laboratory work (in methodical recommendations and independently).</i>  <i>Execution of independent work (tasks in methodical recommendations and eLearn).</i>  <i>Preparation and writing of modular test work (test- in eLearn).</i>	<i>Execution and delivery of laboratory works - credited.</i>  <i>Modular test work in eLearn.</i>  <i>Independent work - according to the evaluation journal in eLearn</i>
	<b>Topic 6.</b> Biological properties of the air. Dust, its classification.	2/4	<b>Dust and microbial pollution.</b> <b>Air protection environment from pollution.</b>	

<p><b>Topic 7. Sanitary and hygienic requirements for litter and manure.</b></p>	<p>2/4</p>	<p>The student must:</p> <p>Know the types of litter for different species of animals and their hygienic assessment, modern approaches to the creation, use and processing of litter material.</p> <p>Understand the responsibility for non-compliance with environmental legislation on violations of the rules for storage and disposal of by-products (manure, urine, manure, litter, animal carcasses, etc.).</p> <p>To be able to choose ways to remove by-products of production (manure, manure, slurry, etc.) on the basis of knowledge of working conditions of machines and devices in animal husbandry.</p> <p>Use modern methods of waste removal, storage and disposal to prevent environmental pollution.</p>		<p><i>Execution and delivery of laboratory works - credited.</i></p> <p><i>Modular test work in eLearn.</i></p> <p><i>Independent work - according to the evaluation journal in eLearn</i></p>
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<p><b>Topic 8. Rehabilitation livestock facilities. Disease prevention measures at livestock facilities.</b></p>	<p>2/4</p>	<p>The student must: Know the hygienic value, methods and techniques of disinfection, disinsection and deratization, know the modern requirements for animal care, the hygienic value of animal hardening and exercise; physiology of thermoregulation of the animal body, the mechanism of stress response of different species of animals, types of vehicles for transporting animals.</p>		
<p><u>In just 4 semesters</u></p>				<p><b>70</b> 100*0,7</p>
<p><u>Test</u></p>				<p><b>30</b></p>
<p><u>Total for the course</u></p>				<p><b>100</b></p>
<p><b>5th semester (3 course) of the calendar plan *</b></p>				

**Module 3. Soil and water hygiene 1.**

<p><b>Topic 1. Soil, its hygienic value. Biogeochemical provinces, their role in non-communicable animal diseases.</b></p>	<p align="center">2/2</p>	<p>The student must:</p> <p>To know the hygienic value of physical, chemical and biological composition of soil, sanitary and hygienic value of soil self-cleaning processes, biogeochemical provinces, their role in non-communicable animal diseases, methods of protection, rehabilitation and disinfection of soil.</p> <p>Use modern equipment and devices to determine soil properties.</p>	<p><i>Preparation for lectures (previous introduction to the presentation and lecture at eLearn).</i></p> <p><i>Execution and delivery of laboratory work (in methodical recommendations and independently).</i></p> <p><i>Execution of independent work (tasks in methodical recommendations and eLearn).</i></p> <p><i>Preparation and writing of modular test work (test- in eLearn).</i></p>	<p><i>Execution and delivery of laboratory works - credited.</i></p> <p><i>Modular test work in eLearn.</i></p> <p><i>Independent work - according to the eLearn evaluation journal</i></p>
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<p><b>Topic 2. Hygienic requirements for feed and feed additives for animals. Hygienic requirements for animal feeding. Prevention of food poisoning in animals.</b></p>	<p>2/2</p>	<p>The student must:          Know the hygienic requirements for the production, procurement, storage and use of feed, the reasons for the decline in feed quality and methods          sanitary and hygienic research, features of sanitary and hygienic control of feed quality and animal feeding in the conditions of industrial complexes, subsidiary, farm and private farms.</p>	<p><i>Preparation for lectures (previous introduction to the presentation and lecture at eLearn).</i></p> <p><i>Execution and delivery of laboratory work (in methodical recommendations and independently).</i></p> <p><i>Execution of independent work (tasks in methodical recommendations and eLearn).</i></p> <p><i>Preparation and writing of modular test work (test- in eLearn).</i></p>	<p><i>Execution and delivery of laboratory works - credited.</i></p> <p><i>Modular test work in eLearn.</i></p> <p><i>Independent work - according to the eLearn evaluation journal</i></p>
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<p><b>Topic 3. Hygienic requirements for water and water supply in animal husbandry.</b></p>	<p>2/2</p>	<p>The student must:          Know physiological and sanitary the importance of water in animal husbandry, sanitary and hygienic requirements for drinking water, sources of water supply and their hygienic assessment; the need for animals, the organization and hygiene of watering animals in different housing systems. Know the processes of self-purification of water and methods of quality control, methods of purification, improving the quality and disinfection of drinking water, characteristics of wastewater, the impact on the sanitary condition of open and groundwater, soils.</p>	<p><i>Preparation for lectures (previous introduction to the presentation and lecture at eLearn).</i></p> <p><i>Execution and delivery of laboratory work (in methodical recommendations and independently).</i></p> <p><i>Execution of independent work (tasks in methodical recommendations and eLearn).</i></p> <p><i>Preparation and writing of modular test work (test- in eLearn).</i></p>	<p><i>Execution and delivery of laboratory works - credited.</i></p> <p><i>Modular test work in eLearn.</i></p> <p><i>Independent work - according to the eLearn evaluation journal</i></p>
<p><b>Module 4. Special hygiene (keeping animals).</b></p>				
<p><b>Topic 4. Hygienic requirements for cattle.</b></p>	<p>2/2</p>	<p>The student must: Know the sanitary requirements for systems and methods of keeping, use of different sex and age and production groups of cattle, hygienic requirements for premises and their internal equipment, sanitary requirements for high quality sanitary milk, hygiene care, feeding, feeding and keeping - fertilizers.</p>	<p><i>Preparation for lectures (previous introduction to the presentation and lecture at eLearn).</i></p> <p><i>Execution and delivery of laboratory work (in methodical recommendations and independently).</i></p> <p><i>Execution of independent work (tasks in methodical recommendations and eLearn).</i></p> <p><i>Preparation and writing of modular test work (test- in eLearn).</i></p>	<p><i>Execution and delivery of laboratory works - credited.</i></p> <p><i>Modular test work in eLearn.</i></p> <p><i>Independent work - according to the eLearn evaluation journal</i></p>



<p><b>Topic 5. Hygienic requirements for keeping pigs.</b></p>	<p>2/2</p>	<p>The student must:          Know the systems and methods of keeping pigs and their hygienic assessment; hygienic requirements for different types of piggeries and features of their internal equipment.          To be able to create comfortable conditions for animals on the basis of knowledge of working conditions of machines and devices in animal husbandry. Use modern equipment and devices to ensure optimal microclimate.</p>	<p><i>Preparation for lectures (previous introduction to the presentation and lecture at eLearn).</i></p> <p><i>Execution and delivery of laboratory work (in methodical recommendations and independently).</i></p> <p><i>Execution of independent work (tasks in methodical recommendations and eLearn).</i></p> <p><i>Preparation and writing of modular test work (test- in eLearn).</i></p>	<p><i>Execution and delivery of laboratory works - credited.</i></p> <p><i>Modular test work in eLearn.</i></p> <p><i>Independent work - according to the eLearn evaluation journal</i></p>
<p><b>Topic 6. Hygienic requirements for keeping sheep and horses.</b></p>	<p>2/2</p>	<p>The student must: Know the systems and methods of keeping animals and their hygienic assessment, hygienic requirements for premises and their internal equipment, features of the internal equipment of sheep and stables.          To know the peculiarities of construction of premises for keeping horses, zoohygienic and veterinary and sanitary requirements in horse breeding, hygiene of keeping stallions, mares and foals, hygiene of working horses and injury prevention.</p>	<p><i>Preparation for lectures (previous introduction to the presentation and lecture at eLearn).</i></p> <p><i>Execution and delivery of laboratory work (in methodical recommendations and independently).</i></p> <p><i>Execution of independent work (tasks in methodical recommendations and eLearn).</i></p> <p><i>Preparation and writing of modular test work (test- in eLearn).</i></p>	<p><i>Execution and delivery of laboratory works - credited.</i></p> <p><i>Modular test work in eLearn.</i></p> <p><i>Independent work - according to the eLearn evaluation journal</i></p>

<b>Topic 7. Hygienic requirements for keeping birds and rabbits.</b>	2/2	<p>The student must: Know the features of construction and placement of premises for various species of poultry and rabbits; hygienic and veterinary-sanitary measures in poultry, rabbit and animal husbandry; poultry and rabbit keeping systems; features of growing young species of different species.</p> <p>Use modern equipment and devices to ensure optimal microclimate.</p>	<p><i>Preparation for lectures (previous introduction to the presentation and lecture at eLearn).</i></p> <p><i>Execution and delivery of laboratory work (in methodical recommendations and independently).</i></p> <p><i>Execution of independent work (tasks in methodical recommendations and eLearn).</i></p> <p><i>Preparation and writing of modular test work (test- in eLearn).</i></p>	<p><i>Execution and delivery of laboratory works - credited.</i></p> <p><i>Modular test work in eLearn.</i></p> <p><i>Independent work - according to the eLearn evaluation journal</i></p>
<b>Topic 8. Hygienic requirements for dogs and cats.</b>	2/2	<p>The student must: Know the features of care and maintenance of animals; hygienic and veterinary-sanitary measures.</p> <p>Determine the microclimate indicators with the help of instruments.</p> <p>Use modern equipment and devices to ensure optimal microclimate.</p>		
<b>Possibility to receive additional points:</b>	Additional points can be obtained for preparing a report and participating in a student conference		<b>to 10 points</b>	
<b>In just 6 semesters</b>			<b>70 100 * 0.7 (maximum 70 points)</b>	
<b>Exam</b>			<b>30</b>	
<b>Total for the course</b>			<b>100</b>	
<b>* Note. Conducting types of classes is carried out in accordance with the schedule of the educational process</b>				

## EVALUATION POLICY

<u>Deadline and recompilation policy:</u>	<u>Works that are submitted in violation of deadlines without good reason are evaluated at a lower grade. Rearrangement of modules takes place</u>
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	<u>with the permission of the lecturer if there are good reasons (for example, hospital).</u>
<u>Academic Integrity Policy:</u>	<u>Write-offs during tests and exams are prohibited (including with the use of mobile devices). Abstracts must have correct textual references to the literature used</u>
<u>Visiting Policy:</u>	<u>Attendance is mandatory. For objective reasons (for example, illness, international internship) training can take place individually (in online form in consultation with the dean of the faculty)</u>

## STUDENT KNOWLEDGE ASSESSMENT SCALE

Student rating, points	National assessment based on the results of the compilation	
	exams	tests
90-100	Excellent	Passed
74-89	Good	
60-73	Satisfactorily	
0-59	Unsatisfactorily	Not passed

## RECOMMENDED LITERATURE

1. Law of Ukraine "On Veterinary Medicine" dated 16.11.2006 No 361-V.
2. Law of Ukraine "On liability of enterprises, institutions and organizations for violation of the legislation on veterinary medicine" dated 05.12.1996 No 569/96-ВР.
3. Law of Ukraine "On Food Safety and Quality" dated 06.09.2005 No2809-IV.
4. Методичні вказівки до проведення лабораторних занять із дисципліни „Гігієна тварин” / М.О. Захаренко, Д.А.Засєкін, В.М. Поляковський та ін. – К.:Арістей. – 2005. – 144 с.

### Information web-resources

1. <https://dspace.mnau.edu.ua/jspui/bitstream/123456789/5855/1/Hihiena%20%20Otvaryn%20%20ta%20%20vetrynarna%20sanitariia.pdf>
2. <http://svynarstvo.in.ua/>
3. <http://agroua.net/animals/>
4. <http://www.horses.dp.ua/>
5. <http://www.milkua.info/uk/>
6. <http://kombikorm.com.ua/news/>
7. <http://www.ptahy.org.ua/>
8. <http://www.usapeec/>
9. <http://krolikovod.com/phpforum/>